REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated June 9, 2008. A Petition for Extension of Time (one month) and the fee therefor are submitted herewith.

Claims 11-16 are currently pending in the application.

With the Official Action of June 9 2008, the Examiner has reopened prosecution of the present application, after the filing of an Appeal Brief, in order to enter new grounds for rejection.

Claims 11-16 were newly rejected under 35 USC 112, second paragraph as being indefinite. The Examiner has referred to claim 14 in enumerating specific "indefinite" elements in the claim as a basis for the rejection but presumably means claim 11 and it will be treated accordingly.

The Examiner stated that the crux of the invention is dependent on the arrangement of components described by the independent claims and that there is a misunderstanding due to the "inaccurate claiming" of the relationships of the "first" "second" and "spare pumping light sources" and a lack of "robust" definitions of each to render an image akin to figure 1. The Examiner pointed to specific examples of indefinite phrasing:

a) The term "disposed at positions" was cited as being indefinite since the Examiner is unsure if the pumping sources are arranged like Figure 6, with spares next to originals, or like Figure 7, with spares in a separate block or that 11 is a first pumping source and 1n is a second pumping source. In response thereto, it is submitted that the figures referred to are specifically noted in the specification as being for different embodiments. There is no obligation on applicant to conform the claims to any single drawing embodiment in order for the claims to be statutorily definite. The meaning of the parameters of position disposition is clear though broadly stated and is not indefinite for anyone reading the claims.

b) The term "respective ones" was cited as lacking a definition and not having antecedent basis. In response thereto, the term has been amended to refer to "respective members" of the plurality of first light sources with each member being a light source.

c) The Examiner referred to the phrase "spare pumping light sources **only in** said plurality of second light sources" as being problematic in meaning. In reply thereto, the word "in" has been amended to be "among" i.e. that the spare pumping light

sources are only among the second light sources, in a physical placement (and not among the first light sources). This is clear, definite and makes sense.

d) The Examiner required clarification of the term "intervening", whether it means "spectrally positioned between two wavelength" or "spatially arranged in a position between and on a line connecting the midpoints of two other sources". In response thereto, claim 11 has been amended to specify that a number of first light sources not having spare pumping light sources are interveningly positioned between two of the second light sources. This clearly defines the positioning as being a physical, rather than a spectral one, without the necessity of further specifying a line connecting mid-points of two other sources as suggested by the Examiner. The Examiner noted that Figure 7 is not compatible with a physical positioning. However, since Figure 7 is only one embodiment of the present invention whether or not it reads on claim 11 is irrelevant.

e) The Examiner noted that he was unable to find definitions of "first", "second", "spare and "source" to allow figure 1 to read on the claimed invention. However as noted above, figure 1 is specifically described as being one embodiment of the invention and whether it reads on the claims is irrelevant to any issues of indefiniteness as asserted by the Examiner as a basis for the rejection.

f) The Examiner considered it unclear if every second pump has a spare or not. In response thereto it is submitted that though the number of spare pumps may be more than, less than, or equal to the number of second light sources, the determining criterion is the positioning and not the number of spare pumps. It is however noted that the invention is predicated on reducing the number of spare pumps in toto and as a practical matter will be less than the number of first light sources.

Since all of the Examiner's bases for the rejection of claim 11 (and claim 16) under 35 USC 112 second paragraph, have been responded to and, it is submitted resolved, the Examiner is respectfully requested to review and withdraw the rejection of the claims under 35 USC 112.

Claims 11-13 and 15 were rejected by the Examiner as being unpatentable under 35 USC 103(a) on the basis of the combined teachings of Namiki et al (PGPub No. 2001/0050802) in view of Zarris et al (PGPub No. 2002/0085268) and claim 16 was rejected by the Examiner as being unpatentable under 35 USC 103(a) on the basis of the combined teachings of Namiki et al

(PGPub No. 2001/0050802) in view of Zarris et al(PGPub No. 2002/0085268) and further in view of Grubb et al (PGPub No. 2002/0067539).

In support of the above rejections, the Examiner re-iterated the reasons set forth in the prior actions. Specifically the Examiner has cited the Namiki et al reference as teaching an optical amplification method in an optical transmission system with a plurality of first light sources for Raman amplification and adjoining plurality of second light sources for Raman amplification with essentially the steps of (with the Examiner citing reference paragraphs in the Namiki et al. disclosure as showing the enumerated step):

1) amplifying the signal light with the first and second light sources for Raman amplification [Figure 23],

2) transmitting the amplified signal light through a transmission line [Figure 23],

3) detecting a deteriorated state of first and second light sources [Par. 0169]

4) restoring signal light by emitting spare pumping light from the spare pumping light sources [0168]

5) the spare pumping light sources are operated only when required to restore deteriorated signal light [0169].

The Zarris reference was cited as teaching that:

1) the spare pumping light sources are provided only with the second light sources [007]
2) the number of spare pumping light sources are less than the number of first light sources [0007]
3) the number of first light sources not having spare pumping light sources intervening between two of the second light sources spare pumping light sources are determined by permissible failure rate of the optical transmission system [007].

The Examiner concluded that it would have been obvious to one skilled in the art to add m spare pumps to the n pump array in the Namiki device and have (n-m)/m pumps between each spare and $m < n$, for the advantage of cost and simplification.

With respect to claim 16, the Examiner noted that claim 16 differed from claim 11 only in that claim 16 does not require that all pumps appear in the same amplifier mode and Namiki and Zarris do not disclose pumping from a plurality of amplifier modes. Accordingly the Examiner cited Grubb as teaching that the pumping can be spread over a number of amplifiers in

the system [0019] and that this would have been effected by one skilled in the art for the advantage of reduced cost.

Independent claims 11 and 16 specifically relate to an optical amplification method for an optical transmission system having a plurality of first light sources **and** a plurality of second light sources. Namiki et al., the primary reference cited by the Examiner does not disclose, teach or suggest, anything other than a single plurality of light sources (i.e., similar to Applicant's

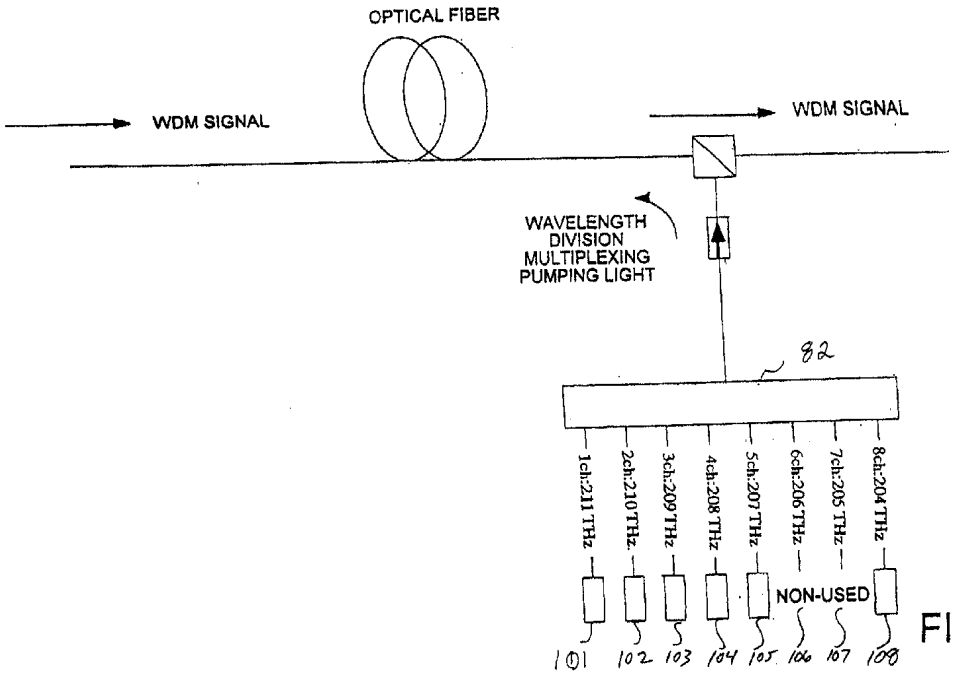

FIG. 23

plurality of first light sources). Figure 23, cited by the Examiner, as illustrating the Namiki et al. system is exemplary of this single plurality of light sources configuration (101-108).

The Examiner has made the initial assumption and assertion that Namiki et al. discloses Applicant's basic optical transmission system. However, the secondary Zarris et al. reference actually goes a step further in a direction away from the presently claimed invention by preferring a single light source and without a plurality of light source.

However, even were it to be conceded (which it is not) that the Namiki et al reference does disclose an optical transmission system with first and second plurality of light sources, Namiki et al., even in combination with Zarris et al, would not provide the presently claimed invention.

The method steps of both independent claims 11 and 16 require one or more spare pumping light sources which are **only** among the plurality of second light sources, i.e., not among the plurality of first light sources. Though this is hard to envision as being possible in Namiki et al's system with only a single light source, even assuming some sort of plurality of

second light sources, there is nothing in Namiki et al. to teach or even vaguely suggest a positioning limitation as in the present claims of the spare pumping light sources being only among the plurality of second light sources.

Furthermore, because of the use of the same word "spare", the Examiner has equated the "spare" pumps of Namiki et al as being equivalent to the "spare" pumping light sources of the present claims. The Examiner has however failed to consider that the definition and use of the term "spare" in the Namiki et al reference is specifically different from the definition and use of the term "spare" in the present claims, with a specifically claimed limitation in the definition of the term. The present claims require that the spare pumping light sources be operated **only** when required to restore deteriorated signal light. In contrast, at every reference to the element "spare" pump in Namiki et al. (paragraphs [0152], [0163] and [0168]) there is a full description of how the "spare" is present in the working system of Namiki et al and used for modification of normal light output characteristics. The only reference in Namiki et al to correction of a non-operating pump is with use of another pump in the system which is in a different on/off state. The meaning of "spare" in Namiki et al. is clearly that of a normally operating pump which is in a different state at a required moment. It is not a truly "spare" element dedicated to a single particular use of deterioration connection.

It is noted that Zarris mentions the term "redundancy" twice, once in paragraph [0007] and again in paragraph [0011] but does not utilize any redundant pump sources in the described invention and initially denigrates the use thereof:

[0007] …Furthermore, -n systems where higher reliability is need, the number of redundant pumps included may be as high as the number of working pumps which in turn exaggerates the problems of cost, size and complexity for the amplifier.

[0011] …Also further pump source(s) may need to be provided for the purpose of redundancy.

In addition, the relative number of first and second light sources, the number of first light sources, not having spare pumping light sources, intervening between two of the second light sources and is determined by a permissible failure rate of optical transmission system. Neither of the cited Namiki et al. and Zarris et al. references teach anything even remotely related to this limitation. Since neither of the references disclose first and second light sources they cannot perforce show the limitation.

The Examiner cited paragraph [0007] of Zarris et al. (see above quote from the paragraph) as teaching that the spare pumping light sources are provided only with the second light sources [0007]; that the number of spare pumping light sources are less than the number of first light sources [0007]; and that the number of first light sources not having spare pumping light sources intervening between two of the second light sources spare pumping light sources are determined by permissible failure rate of the optical transmission system [0007] and concluding that it would have been obvious to one skilled in the art to add m spare pumps to the n pump array in the Namiki device and have (n-m)/m pumps between each spare and $m < n$, for the advantage of cost and simplification. One skilled in the art would not be able to arrive at the claim limitation described above from the simple statement that, "Furthermore, -n systems where higher reliability is need, the number of redundant pumps included may be as high as the number of working pumps which in turn exaggerates the problems of cost, size and complexity for the amplifier."

The Examiner, with respect to the rejection of claim 16, has failed to address the limitation of detecting deterioration signal light of first and/or second wavelength signals in the first light source and restoring signal light by operating first and second spare pumping light sources at the first and second wavelength. The cited Grubb et al reference was cited as a teaching of an unrelated pumping from a plurality of amplifier nodes (a difference apparently perceived by the Examiner as differentiating claims 11 and 16). Nevertheless, Grubb et al does not teach the limitations of claim 16, which in fact differ from those of claim 11. None of the cited prior art whether alone or in combination provides the claimed invention.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

Respectfully submitted,

THIS CORRESPONDENCE IS BEING SUBMITTED ELECTRONICALLY THROUGH THE UNITED STATES PATENT AND TRADEMARK OFFICE EFS FILING SYSTEM ON OCTOBER 2, 2008

MAX MOSKOWITZ
Registration No.: 30,576
OSTROLENK, FABER, GERB & SOFFEN, LLP
1180 Avenue of the Americas
New York, New York 10036-8403
Telephone: (212) 382-0700